

PATHOLOGY EXAM # 1
September 13, 2000

Name: _____

(Please sign your exam if you wish it returned to you)

NOTE: Please check your test to make sure there are 9 pages with a total of 50 Questions.

Practical Questions:

Matching: The following pertain to questions 1 and 2 and refer to Figure 2-16 from the Robbins text. You may use an answer once, more than once, or not at all.

- A. Cancer cells
- B. Somatic tissues
- C. Germ cells
- D. Stem cells

1. B Telomerase activity is usually not expressed in B.
2. A When telomerase is reactivated in these cells, telomeres are not shortened, thus rendering them immortal. A
3. This gross photograph best represents which one of the following types of inflammation?
 - A. Serous
 - B. Pseudomembranous
 - C. Fibrinous
 - D. Suppurative
 - E. Ulceration
4. This photomicrograph best represents which one of the following?
 - A. Abscess formation
 - B. Exudation
 - C. Macrophage accumulation
 - D. Granuloma formation
 - E. Organization

5. This micrograph is from the liver of a man found dead in a cotton field north of Lubbock. The microscopic findings: likely premortem clinical scenario:
- ~~A.~~ Liquefactive necrosis and neutrophils; 50 year old active alcoholic
 - ~~B.~~ Liquefactive necrosis and neutrophils; 48 year old with liver abscess
 - C. Mallory's hyaline and fatty change (steatosis); 48 year old with acute viral hepatitis
 - D. Mallory's hyaline and fatty change (steatosis); 50 year old active alcoholic
 - E. Apoptosis and cholestasis; 48 year old with liver abscess
6. This micrograph is from the stomach of a 39 year old man with a long history of chronic gastritis. The histological finding on the RIGHT side of the photograph is best described as
- A. Metaplasia
 - B. Hyperplasia
 - C. Hypertrophy
 - D. Atrophy
 - E. Hypoplasia
7. This is from the gallbladder in a 40 year old woman who presented with right upper quadrant pain and was found to have many yellow-green gallstones. The cells in the lamina propria contain:
- A. Triglyceride
 - ~~B.~~ Cholesterol
 - ~~C.~~ Hemosiderin
 - ~~D.~~ Immunoglobulin
 - ~~E.~~ Bilirubin
8. The most likely histological finding in the very hard, dry discolored area in this foot amputated from a 50 year old diabetic:
- A. Apoptosis
 - B. Coagulative necrosis
 - C. Fat necrosis
 - D. Granulomatous inflammation
 - E. Anthracotic pigmentation

9. This tissue is from the edge of a 7 day old, 3 cm wide stomach ulcer. Identify the histological pattern and the characteristic cells involved:
- ~~A.~~ Granulomatous inflammation: epithelioid histiocytes, giant cells, lymphocytes
 - ~~B.~~ Granulomatous inflammation: endothelial cells, macrophages, and fibroblasts
 - C. Granulation tissue: endothelial cells, macrophages, and fibroblasts
 - D. Granulation tissue: epithelioid histiocytes, giant cells, lymphocytes
10. The section of lung shown on this slide is representative of which of the following diseases?
- A. Silicosis
 - B. Asbestosis
 - C. Coal worker's pneumoconiosis
 - D. Berylliosis
 - E. Byssinosis
11. The hand shown in this slide would have most likely belonged to:
- A. An automobile mechanic
 - B. A farm worker
 - C. A computer operator
 - D. A banker

Written Questions:

Matching: The following pertain to questions 12 through 15. You may use an answer once, more than once, or not at all.

- A. Glutathione
 - B. Vitamin E
 - C. Ceruloplasmin
 - D. Glutathione peroxidase
 - E. Transition metals
12. Catalyzes free radical formation in the Fenton reaction.
13. Functions as a membrane antioxidant by scavenging free radicals and terminating radical damage
14. Protects against free radical injury by catalyzing the free radical breakdown of hydrogen peroxide.

15. Serves as a transport protein thereby minimizing hydroxyl radical formation.

Matching: The following pertain to questions 16 and 17. You may use an answer once, more than once, or not at all.

- A. Caspases
- B. Ca and Mg dependent endonuclease
- C. Bcl-2
- D. NF-KB
- E. Cytochrome c

16. This (these) must undergo activating cleavage prior to final cell death.

17. This is activated following degradation of its inhibitor prior to induction of transcription.

18. Phagocytosis is increased by:

- A. Serotonin
- B. Bradykinin
- C. Albumin
- D. Opsonin
- E. Ferritin

19. Suppuration or the production of pus is the result of:

- A. Hydrolases released from necrotic neutrophilic leukocytes
- B. Action of mast cells
- C. Bacterial toxins
- D. Extrusion of enzymes from histiocytes
- E. The activity of eosinophilic leukocytes

20. In acute inflammation, as compared to chronic inflammation, there will be more:

- A. Lymphocytes
- B. Fibroblasts
- C. Plasma cells
- D. Polymorphonuclear leukocytes
- E. Macrophages

21. Histamine is thought to be the direct cause of:
- A. Leucocytosis
 - B. Emigration
 - C. Phagocytosis
 - D. Vascular permeability
 - E. Fibroblast proliferation
22. The most important complement-derived chemotactic factor for neutrophils is:
- A. C-3 fragments
 - B. C-5 fragments
 - C. C 567 complex
 - D. C-kinin
 - E. C-1 factor
23. The Langhans giant cell is derived from:
- A. Fibroblasts
 - B. Eosinophilic leukocytes
 - C. Lymphocytes
 - D. Plasma cells
 - E. Epithelioid histiocytes
24. The chemical which causes the most deaths in our country each year is:
- A. Cocaine
 - B. Aspirin
 - C. Ethyl alcohol
 - D. Carbon monoxide
25. Electrical burns MOST commonly occur in the:
- A. Brain
 - B. Skin
 - C. Muscle
 - D. Lung
 - E. Heart
26. The organ most effected by chronic alcoholism is:
- A. Brain
 - B. Heart
 - C. Kidney
 - D. Liver

27. The euphoria or "high" from cocaine appears within a few minutes and disappears after:
- A. 15 to 40 minutes
 - B. 60 to 120 minutes
 - C. 120 to 240 minutes
 - D. 240 to 480 minutes
28. At what age is poisoning in children most common?
- A. 6 months
 - B. 6 years
 - C. 2 years
 - D. 12 years
29. A 20 year-old football player suddenly collapses during play and suffers an immediate cardiac arrest from which he cannot be resuscitated. The most probable illicit drug contributing to this man's death is:
- A. Amphetamines
 - B. Cocaine
 - C. Marijuana
 - D. Benzodiazepine
30. A basal cell carcinoma was removed from the face of a 72 year-old male. Which form of electromagnetic radiation played the greatest role in development of this neoplasm?
- A. Ultraviolet rays
 - B. Infrared rays
 - C. X-rays
 - D. Gamma rays
31. An older man who lives alone in a poorly ventilated house without central heating uses a small kerosene heater to warm the house during the winter months. He was found one morning in his bed, by his son who had stopped by on his way to work. The man had a reddish color to his skin and was having difficulty breathing. The most likely cause of this person's medical problem is:
- A. Coal dust inhalation
 - B. Ozone exposure
 - C. Sulfur dioxide exposure
 - D. Carbon monoxide poisoning
32. In 1999 thirty thousand deaths in the United States were attributed to automobile accidents. A major contributing factor to these accidents was:
- A. Talking on cellular phones
 - B. Listening to the radio
 - C. Consuming alcoholic beverages
 - D. Accessing the internet from a laptop computer

33. The most common environmental pollutant which cause more deaths each year than any other agent is:
- A. Carbon monoxide
 - B. Lead
 - C. Arsenic
 - D. Cigarette smoke
34. A 20 year-old alcohol abusing woman becomes pregnant. When the child is born it will most likely have the following syndrome?
- A. Fetal lung immaturity
 - B. Iron deficiency
 - C. Fetal alcohol syndrome
 - D. Adrenal insufficiency
35. A young boy has a history of chewing on painted surfaces. He is found to have hematopoietic, nervous system, and kidney abnormalities. He would most likely be suffering from ingestion of:
- A. Iron
 - B. Mercury
 - C. Arsenic
 - D. Lead
36. Pesticide poisoning is most commonly found among:
- A. Farmers applying the pesticides
 - B. Factory workers manufacturing the pesticides
 - C. Crop dusters spraying the pesticides
 - D. Homeowners and renters spraying the pesticides
37. The most important period for the tetragenetic effects of ethanol is:
- A. During conception
 - B. First trimester
 - C. Second trimester
 - D. Third trimester

Matching: The following pertain to questions 38 through 40. You may use an answer once, more than once, or not at all.

- A. TGF - α
- B. EGF
- C. VEGF
- D. TGF - β
- E. PDGF

38. Growth inhibition

39. Adult angiogenesis

40. Inflammatory fibrogenesis

Matching: The following pertain to questions 41 through 44. You may use an answer once, more than once, or not at all.

- A. Apoptosis
- B. Necrosis
- C. Hyperplasia
- D. Hypertrophy

41. Not seen in cardiac muscle

42. Ovarian follicles in postmenopausal woman

~~Atrophy~~

43. Skeletal muscle after 3 weeks of weight lifting

44. Thyroid change from a thyrotropin producing pituitary adenoma

45. Dystrophic calcification:

- A. Normal calcium metabolism, calcified normal tissue
- B. Abnormal calcium metabolism, calcified normal tissue
- C. Normal calcium metabolism, calcified necrotic tissue
- D. Abnormal calcium metabolism, calcified necrotic tissue

46. Laminin and fibronectin bind to:

- A. Tyrosine kinase receptor
- B. Integrin
- C. Seven spanning receptor
- D. Cyclin
- E. Tie2

47. The patients below each had open lower leg wounds with bone fractures in accidents of similar force and extent of injury. Who should heal first?

- A. 76 year old retired ad executive with moderate peripheral vascular disease
- B. 33 year old woman on daily high dose steroids for asthma
- C. 19 year old man with 10 year history of insulin dependent diabetes
- D. 27 year old male professional marathon runner
- E. 19 year old female model who is 20 pounds underweight because of anorexia nervosa

48. Prussian blue is a stain used to identify:

- A. Bilirubin
- B. Calcium
- C. Carbon
- D. Hemosiderin
- E. Melanin

49. Marfan syndrome, a familial defect in fibrillin, would most likely cause a problem in the

- A. Aorta
- B. Brain
- C. Kidney
- D. Liver
- E. Spleen

50. Healing by secondary intention occurs rather than healing by primary intention because an injury:

- A. Produces a larger tissue defect requiring wound contraction
- B. Induces more leukotrienes
- C. Produces a different variety of new vessels
- D. Inactivates the tyrosine kinase receptors
- E. Induces an aberrant Rb (retinoblastoma) gene